Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Carrier Current Systems, including Broadband over Power Line Systems	)	ET Docket No. 03-104
	)	
	)	
Amendment of Part 15 regarding new requirements and measurement guidelines for Access Broadband over Power Line Systems	)	ET Docket No. 04-37

To: The Commission

June 22, 2004

COMMENTS OF GERALD W. MURRAY, WA2IWW

1. Background

My name is Gerald W. Murray. I have held Amateur Radio license WA2IWW since 1976, and have held the Amateur Extra class license since 1992. I also hold the following FCC commercial radio operator licenses:

- General Radiotelephone Operator License (GROL) with Ship Radar Endorsement
- Second Class Radiotelegraph Operator's Certificate with Ship Radar Endorsement
- GMDSS Radio Operator/Maintainer License with Ship Radar Endorsement

I am currently employed as a Data Communications Specialist II by the New York State Workers' Compensation Board (NYSWCB). I had previously been employed as a broadcast operator by AM and FM broadcast stations in Upstate New York's Capital District Area.

2. Deployments

As an amateur radio operator, I have proudly volunteered to provide community service for the following events:

- American Red Cross, "Storm of the Century", 3/13/1993 – 3/14/1993
- New York State Emergency Management Office, Ice Storm '98, , 1/10/1998 – 1/23/1998
- New York State Emergency Management Office, Y2K Event, 12/31/1999 – 1/1/2000
- Schenectady (NY) Emergency Operations Center, Verizon Central Office Flood/Telephone Service Disruption, 12/28/2000
- New York State Emergency Management Office, 9/11 Terrorist Attacks, 9/11/2001 – 9/12/2001
- Military Affiliate Radio System (MARS), Ft. Meade, MD, Exercise Grecian Firebolt 2004, 6/14/2004

3. Affiliations

I joined the American Red Cross in January of 2003, and recently joined Air Force MARS (Military Affiliate Radio Service), and the Citizen's Corps. However, my comments and opinions are my own, and do not necessarily reflect the opinions of the American National Red Cross, the Military Affiliate Radio Service, or the Citizens Corps.

4. The FCC's role in prior technological advancements

The FCC has successfully managed the roll out of new technological advancements in the past. It mandated certain compatibility requirements which helped to insure an orderly transition and minimize disruption to existing users.

- FM Stereo - FCC-mandated compatibility requirement allowed the continuing use of monaural exciters, transmitters, and receivers)

- AM Stereo - FCC-mandated compatibility requirement allowed the continuing use of monaural broadcast equipment, transmitters, and receivers)

- Color Television - FCC-mandated compatibility requirement allowed the continuing use of black and white broadcast equipment, transmitters, and receivers)

- HDTV - When faced with a choice of multiple competing systems, FCC action resulted in the formation of the "grand alliance" and the pooling of technologies which provided a new system which included the best features from each of the individual systems. Even so, the resulting digital system was fundamentally incompatible with existing analog television transmission. To address this point, the FCC developed a strategy which provided existing TV broadcasters with new allocations for HDTV signals. The television broadcasters would operate both versions for a period of several years before the old analog television transmissions were phased out. Any remaining analog receivers could still be used by adding a digital converter.

5. The BPL Proceeding

The record to date shows many problems and disagreements:

- NTIA finding that the measurements using loop antennas mounted at 1 meter may underestimate signal intensity by up to 20 dB (100 times).

- Differing positions from BPL proponents regarding harmful interference:

  - Some proponents claims that BPL interference does not occur

  - Other BPL proponents claim to reserve the right to judge whether interference complaints are "valid".

  - Others have tried to set limits on who is qualified to report harmful interference.

  - Others expect that mobile installations should change their location to avoid harmful interference.

  - Others have claimed to have resolved interference, even thought the complaining parties disagree.

  - Others have made substantial (but unsuccessful) efforts to resolve reported interference.

- The FCC has not resolved any of the BPL interference complaints which are in the possession of the Office or Engineering Technology (OET) or the Enforcement Bureau.
- Comments filed by ARINC and Boeing which outline harmful interference concerns for aircraft in flight.

6. Technical Problems and Standards

The Amperion system reportedly uses frequency bands which are 6 MHz wide. Presumably, operators of the Amperion system can use adaptive frequency techniques to select which band(s) are used at a given location. However, the excessive width of these 6 MHz wide bands limits the effectiveness of this technique for protection of the services listed below:

- Between 1.7 MHz and 30 MHz, there are no 6 MHz portions of the spectrum which do not contain Amateur Radio allocations.
- Between 1.7 MHz and 30 MHz, there are no 6 MHz portions of the spectrum which do not contain domestic and international short wave broadcasting allocations.
- The NTIA has identified forty-one (41) frequency bands between 1.7 MHz and 80 MHz which should receive special protection. In the range between 1.7 MHz and 30 MHz, there are no 6 MHz portions of the spectrum which do not include bands recommended for protection by the NTIA. (NTIA Study 04-413, Section 4, Pages 4-8 through 4-10)
- The NIST operates radio station WWV on 2.5, 5, 10, 15, and 20 MHz, and radio station WWVH on 2.5, 5, 10, and 15 MHz. These stations provide standard time

and frequency services, which are used by amateur radio operators, electronic hobbyists, short wave radio listeners, laboratories, and equipment repair shops. These services are provided at taxpayer expense, and are freely available to all. These frequencies are contained within the 41 bands which the NTIA has recommended for protection.

Adaptive frequency techniques are more likely to be effective if smaller frequency bands (such as 10 kHz to 15 kHz) are used. These smaller segments could be used to "work around" the 41 bands recommended for protection by the NTIA, as well as frequencies and bands used by radio services which are operating in or near BPL service areas.

The FCC should seriously consider the implementation of regulations and the promotion of standards related to narrow width of channels.

7. Conclusion

The public interest, convenience and necessity mandate that the protection of existing services from harmful interference (particularly those services involving the protection of life and property) overrides the Commission's interest in promoting an unlicensed new technology which causes such harmful interference.

The FCC should endeavor to resolve the open technical and regulatory issues before authorizing the continued deployment of BPL. Attempts to correct problems after BPL is widely deployed will amount to "closing the barn door after the horse has escaped". By this point, users of licensed radio services will have suffered irreparable harm.

Respectfully submitted,

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